Appendix C: POTW Administrative Costs

Introduction

Effluent guidelines and limitations are implemented by Federal, State and local government entities through the NPDES permit program (for direct dischargers) and the General Pretreatment Regulations (for indirect dischargers). A new effluent guideline rule may require that some facilities be permitted for the first time, may require that some facilities that already have permits be issued a different form of permit, and may require repermitting of facilities sooner than would otherwise be required. In these cases, the permitting authority will incur additional costs to implement the effluent guideline rule. This appendix provides information on the unit costs of these permitting activities, based on information reported by POTWs in the Metal Products and Machinery (MP&M) POTW Survey, and describes the calculation of government permitting costs for the proposed MP&M rule and regulatory alternatives.

The first section of this appendix provides an overview of permitting requirements under the NPDES Permit Program and the General Pretreatment Regulations. The second section describes the MP&M POTW Survey and the methods used to develop unit cost estimates from the survey responses. The third section presents the estimates of unit costs by permitting activity, and the final section lists the steps involved in applying these unit costs to calculate administrative costs for a particular regulatory option.

C.1 Effluent Guidelines Permitting Requirements

Any facility that directly discharges wastewater to surface water is required to have a permit issued under the National Pollution Discharge Elimination System (NPDES) permit program. Facilities that discharge indirectly through a publicly-owned treatment works (POTW) are regulated by the General Pretreatment Regulations for Existing and New Sources of Pollution (40 CFR Part 403). The major portion of government administrative costs associated with implementing an effluent guidelines rule are the costs of managing the NPDES and Pretreatment programs for the regulated facilities. Permitting under these two programs is discussed below.

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C.1.1 NPDES Basic Industrial Permit Program

Effluent guidelines Best Available Technology (BAT) and New Source Performance Standards (NSPS) regulations will be implemented through the NPDES industrial permit program. In general, EPA does not expect the administrative costs associated with the NPDES industrial permit program to increase as a result of the proposed MP&M rule. The Clean Water Act prohibits discharge of any pollutant to a water of the U.S. except as permitted by a NPDES permit. Therefore, every facility that discharges wastewater directly to surface water must hold a permit specifying the mass of pollutants that can be discharged to waterways. The proposed rule will affect the terms of the permits but is unlikely to increase the administrative costs associated with permitting.

In fact, the proposed rule may decrease the administrative burden of NPDES permits. The technical guidance provided by EPA as a component of rulemaking provides valuable information to permitting authorities that is likely to reduce the research required to develop Best Professional Judgment (BPJ) permits.[1] Further, establishing discharge

[1] Permits issued to facilities not covered by effluent guidelines or water quality-based standards are developed based on BPJ.

standards may reduce time spent by permitting authorities establishing limits and the frequency of evidentiary hearings. The promulgation of limitations may also enable EPA and the authorized States to cover more facilities under general permits. General permits are single permits covering a common class of dischargers in a specified geographic area.

C.1.2 Pretreatment Program

The General Pretreatment Regulations (40 CFR Part 403) establish procedures, responsibilities, and requirements for EPA, States, local governments, and industry to control pollutant discharges to POTWs. Under the Pretreatment Regulations, POTWs or approved States implement categorical pretreatment standards (i.e., PSES and PSNS).

Discharges from an MP&M facility to a POTW may be permitted in the baseline.[2] For example, industrial users subject to another Categorical Pretreatment Standard would have a discharge permit. Other significant industrial users (SIU) that are typically permitted by POTWs include industrial users that:

- discharge an average of 25,000 gallons per day or more of process wastewater to a POTW,
- contribute a process waste stream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant, or
- have a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard.

EPA does not expect the costs of administering the pretreatment program to increase due to the MP&M regulation for facilities that already hold a permit specifying the allowable mass of pollutant discharge to water. Governments will incur additional permitting costs, however, for unpermitted facilities and for any facilities currently with a concentration-based permit that will be issued a mass-based permit under the proposed rule instead. The remainder of this section estimates these cost increases. As with direct industrial dischargers, promulgation of the MP&M rule may cause some administrative costs to decrease. EPA has not estimated potential reductions in government administrative costs.

C.2 METHODOLOGY

C.2.1 Data Sources

EPA collected information from Publicly Owned Treatment Works (POTWs) to support development of the MP&M effluent guideline. Of 150 surveys mailed, EPA received responses to 147, for a 98 percent response rate. The POTW survey asked respondents to provide information on administrative permitting costs, sewage sludge use and disposal costs and practices, and general information (including number of permitted users and number of known MP&M dischargers). The administrative cost information included the number of hours required to complete specific permitting and repermitting, inspection, monitoring, and enforcement activities. Respondents were also asked to provide an average labor cost for all staff involved in permitting activities. EPA used the survey responses on administrative costs to estimate a range of costs incurred by POTWs to permit a single MP&M facility.

C.2.2 Overview of Methodology

EPA estimated increases in government administrative costs only for indirect discharging MP&M facilities. This section describes the steps used to develop these estimates.

a. Determine the number and characteristics of indirect dischargers that will be permitted under the proposed rule.

The cost of permitting a given MP&M facility varies depending on whether the facility is already permitted. EPA has information from the MP&M facility surveys on baseline permit status. Because costs differ by type of permit (mass-based versus concentration-based), EPA determined how many permits of each type would be issued. All Steel Forming & Finishing facilities will require mass-based permits under the proposed rule. Mass-based permits are not required for the other subcategories. Permit writers can determine what type of permit is appropriate for facilities in subcategories other than Steel Forming & Finishing. EPA is encouraging permit writers and control authorities to issue mass-based permits and control mechanisms, however, where appropriate and feasible. For costing purposes, the analysis of permitting costs assumes that one-third of the new or reissued permits in subcategories other than Steel Forming & Finishing will be mass-based. To the degree that POTWs do not require mass-based permits in subcategories other than Steel Forming & Finishing, this analysis will overestimate administrative costs.

[2] Under the General Pretreatment Program, a facility's discharges may be controlled through a "permit, order or similar means". For simplicity, this document refers to the control mechanism as a permit

b. Use the data from the POTW survey to determine a high, middle, and low hourly burden for permitting a single facility.

EPA defined the low and high estimates of hours such that 90% of the POTW responses fell above the low value and 90% of responses fell below the high value. The median value is used to define the middle hourly burden.

c. Use the data from the POTW survey to determine the average frequency of performing certain administrative functions.

For administrative functions that are not performed at all facilities, survey data were used to calculate the portion of facilities requiring these functions. For example, the survey data show that on average 38.5% of facilities submit a non-compliance report.

d. Multiply the per-facility burden estimate by the average hourly wage.

EPA determined a high, middle and low dollar cost of administering the rule for a single facility by multiplying the per-facility hour burden by the average hourly wage. The POTW survey reported an average hourly labor rate of $36.98 ($1999) for staff involved in permitting. This is a fully-loaded cost, including salaries and fringe benefits.

e. Calculate the annualized cost of administering the rule.

The number of facilities, hourly burden estimate, frequency estimates, and hourly wage estimates are all combined to determine the total cost of administering the rule. The type of administrative activities required varies over time and the total administrative cost is calculated over a 15 year time period. EPA calculated the present value of total costs using a seven percent discount rate, and then annualized the present value using the same seven percent discount rate.

C.3 Unit Costs of Permitting Activities

This section presents unit costs for the following permitting activities:

- ***Permit application and issuance***: developing and issuing concentration-based permits at previously unpermitted facilities; developing and issuing mass-based permits at previously unpermitted facilities; developing and issuing mass-based permits at facilities with concentration-based permits; providing technical guidance; and conducting public and evidentiary hearings;
- ***Inspection***: inspecting facilities both for the initial permit development and to assess subsequent compliance;
- ***Monitoring***: sampling and analyzing permittee's effluent; reviewing and recording permittee's compliance self-monitoring reports; receiving, processing, and acting on a permittee's non-compliance reports; and reviewing a permittee's compliance schedule report for permittees in compliance and permittees not in compliance;
- ***Enforcement***: issuing administrative orders and administrative fines; and
- ***Repermitting***.

EPA believes that these functions constitute the bulk of the required administrative activities. EPA recognizes that there are other relatively minor or infrequent administrative functions (e.g., identifying facilities to be permitted, providing technical guidance to permittees in years other than the first year of the permit, or repermitting a facility in significant non-compliance) but expects the associated costs to be insignificant compared to the estimated costs for the five major categories outlined above.

For each major administrative function, this section provides below: (1) a description of the activities involved, (2) the estimated percentage of facilities that require the administrative function; (3) the frequency with which the function is performed, and (4) high, medium and low estimates of per facility hours and costs.

C.3.1 Permit Application and Issuance

Before issuing a wastewater discharge permit to a facility, the permit authority typically inspects the facility, monitors the facility's wastewater, and completes pollutant limits calculations and permit paperwork. This section discusses the costs of completing limits calculations and paperwork; subsequent sections address inspection and monitoring costs. This section also discusses the costs of technical assistance that the control authority may provide facilities to facilitate compliance with new limits. Finally, this section includes the costs of public and evidentiary hearings that may be required for some permits.

a. Issue a concentration-based permit at a previously unpermitted facility

To issue a concentration-based permit, permit authorities first review permit applications for completeness. If an application is incomplete, the authorities notify the applicant and request the missing information. Completed applications are assigned to permit writers, who review the applications in more detail as they develop permit conditions. The effort required to complete these activities

depends, in part, on the extent to which the permit authority has automated the permitting process.

EPA assumed that one-third of facilities are permitted in each of the three years following the rule's effective date because compliance is mandated within three years of the date the standard is effective (40 CFR Section 403.6). EPA further assumed that facilities are repermitted in five year cycles. (The administrative costs of repermitting are discussed separately below.) The actual number of facilities that are permitted each year is likely to differ somewhat from EPA's simplifying assumption. The Agency would prefer to receive baseline facility monitoring reports from all facilities early in the permitting process. Control authorities are then expected to place a priority on issuing mass-based permits. These minor differences in permit timing are not expected to significantly change the estimated administrative costs.

Table C.1: Administrative Activity: Develop and issue a concentration-based permit at a previously unpermitted facility

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
100% of unpermitted MP&M facilities that will be issued a concentration-based permit (for costing purposes, this is assumed to be 2/3 of all facilities being issued a permit for the first time)	One time	3.7 hours; $137	9.7 hours; $359	30.7 hours; $1,1345

b. Issue a mass-based permit for a previously unpermitted facility

The administrative activities required to issue a concentration-based permit are also required for a mass-based permit. In addition, for mass-based permits issued under the MP&M rule, the permit writer must determine whether the facility practices pollution prevention and water conservation methods equivalent to those specified as the basis for BPT. If so, the permitting authority must determine the facility's historical flow rate. If not, the authority must derive a mass-based limit based on other factors such as production rates. When a facility matches BPT water conservation practices and provides historic flow data, development of a mass-based permit is a relatively straight-forward process. However, the task will be more challenging at a facility practicing only limited water conservation, particularly if the facility has multiple production units and generates integrated process and sanitary wastewaters.

Table C.2: Administrative Activity: Develop and issue a mass-based permit at a previously unpermitted facility

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
100% of unpermitted MP&M facilities that will be issued a mass-based permit (for costing purposes, this is assumed to be 1/3 of all facilities being issued a permit for the first time)	One time	4.0 hours; $148	12.0 hours; $444	40.0 hours; $1,479

c. Issue a mass-based permit for a facility with a concentration-based permit

Some of the activities described above for issuing a mass-based permit will be simplified in cases where the facility already holds a concentration-based permit. For example, much of the basic information required in the permitting application will already be in the permitting authorities' records. However, the potentially labor-intensive task of determining the flow basis for the permit remains.

Table C.3: Administrative Activity: Develop and issue a mass-based permit at a facility holding a concentration-based permit

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
100% of Steel Forming & Finishing facilities that currently have a concentration-based permit, plus 1/3 of all other MP&M facilities that currently hold a concentration-based permit	One time	2.0 hours; $74	8.0 hours; $296	21.0 hours; $777

d. Provide technical guidance to a permittee

Technical guidance is frequently provided by permit authorities to permittees concurrent with the issuance of a new permit. There are no legal requirements that a permit authority provide a permittee with technical guidance. However, such guidance is generally in the interest of all parties as it can expedite the permitting process, accelerate the permittee's compliance, and reduce the compliance burden. The extent of technical guidance provided varies dramatically among permit authorities. In some cases, a permit authority may hold a one-day workshop to provide information on a new pretreatment standard to facilities. In other cases, a permit authority may meet extensively with individual permittees to educate them regarding their responsibilities under pretreatment standards. The range of technical guidance appears to depend on whether the permittee already has a wastewater permit, whether the permittee is part of a multi-facility company, the resources of the permit authority, and the extent to which the permit authority has written or standardized guidance available for dissemination.

EPA assumed that permit authorities provide technical guidance to all facilities being issued a new mass-based or concentration-based permit under the MP&M pretreatment standards. Costs for technical guidance were estimated separately for facilities receiving a concentration-based permit and facilities receiving a mass-based permit. EPA assumed that technical guidance is provided in the year the initial permit is issued.

Table C.4: Administrative Activity: Provide technical guidance to permittee on permit compliance

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
100% of MP&M facilities being issued a new concentration-based permit	One time	1.0 hour; $37	3.3 hours; $122	10.7 hours; $396
100% of MP&M facilities being issued a new mass-based permit	One time	2.0 hours; $74	3.7 hours; $137	13.0 hours; $481

e. Conduct a public or evidentiary hearing on a proposed permit

Federal regulations provide for a period during which the public may submit written comments on a proposed permit for direct dischargers and/or request that a public hearing be held. Permitting authorities for indirect dischargers may have the same requirements. Thus, proposed permits for indirect dischargers may be subject to public comments and hearings. Pretreatment public hearings are typically conducted at a scheduled local government (e.g., City Council) meeting. The meetings may require substantial preparation.

Federal regulations also provide for evidentiary hearings following final permit determination for direct dischargers. Again, permitting authorities for indirect dischargers may have these requirements as well. Thus, final permit determinations for indirect dischargers may be subject to evidentiary hearings.

Data from the POTW survey indicated that a public or evidentiary hearing would be required for 3.6% of indirect dischargers being issued a new mass-based or concentration-based permit, on average.

Table C.5: Administrative Activity: Conduct a public or evidentiary hearing				
Percent of facilities for which activity is required	**Frequency of activity**	**Typical costs**		
		Low	**Median**	**High**
3.6% of MP&M facilities being issued a new mass-based or concentration-based permit	One time	2.3 hours; $85	8.0 hours; $296	33.3 hours; $1,231

C.3.2 Inspection

Permit authorities may choose to integrate their inspection and monitoring work force or to administer these functions separately. This discussion covers inspections only; monitoring is discussed below. Inspections are performed both to assess conditions for initial permitting and to evaluate compliance with permit requirements. Inspections involve record reviews, visual observations, and evaluations of the treatment facilities, effluents, receiving waters, etc. EPA assumed that the initial inspection would occur in the same year a new permit is issued, and that all permitted facilities would be inspected annually to assess compliance.

Table C.6: Administrative Activity: Inspect facility for permit development				
Percent of facilities for which activity is required	**Frequency of activity**	**Typical costs**		
		Low	**Median**	**High**
100% of MP&M facilities being issued a new permit	One Time	2.3 hours; $85	4.7 hours; $174	12 hours; $444

Table C.7: Administrative Activity: Inspect facility for compliance assessment				
Percent of facilities for which activity is required	**Frequency of activity**	**Typical costs**		
		Low	**Median**	**High**
100% of MP&M facilities being issued a new permit	Annual	1.8 hours; $67	3.7 hours; $137	10.0 hours; $370

C.3.3 Monitoring

Permitting authorities monitor facilities both to gather data needed for permit development and to assess compliance with permit conditions. Monitoring includes sampling and analysis of the permittee's effluent, review of the permittee's compliance self-monitoring reports, receipt of non-compliance reports, and review of compliance schedule reports. These activities are discussed below.

a. Sample and analyze permittee s effluent

As noted above, inspection and monitoring staff may be integrated or distinct. The costs of inspection were presented above. Federal regulations require that the permit authority "randomly sample and analyze the effluent from industrial users...independent of information supplied by industrial users" (40 CFR Part 403.8). The permit authority obtains samples required by the permit and performs chemical analyses. The results are used to verify the accuracy of the permittee's self-monitoring program and reports, determine the quantity and quality of effluents, develop permits, and provide evidence for enforcement proceedings where appropriate.

EPA estimated sampling costs for all facilities issued a new permit under the MP&M rule, and assumed annual monitoring. Although EPA requires only annual effluent sampling, some localities sample more frequently. EPA encourages this practice.

Table C.8: Administrative Activity: Sample and analyze permittee s effluent				
Percent of facilities for which activity is required	**Frequency of activity**	**Typical costs**		
		Low	**Median**	**High**
100% of MP&M facilities being issued a new permit	Annual	1.0 hour; $37	3.0 hours; $111	14.0 hours; $518

b. Review and record permittee s compliance self-monitoring reports

40 CFR Part 403.12 specifies that: "Any Industrial User subject to a categorical pretreatment standard...shall submit to the Control authority during the months of June and December...a report indicating the nature and concentration of pollutants in the effluent which are limited by such categorical pretreatment standards." The permit authority briefly reviews these submissions and may enter the information into a computerized system and/or file the data.

EPA estimated the costs of handling annual self-monitoring reports for all facilities being issued a new permit under the MP&M rule.

Table C.9: Administrative Activity: Review and enter data from permittee s compliance self-monitoring reports

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
100% of MP&M facilities being issued a new permit	Annual	0.5 hours; $18	1.0 hour; $37	3.5 hours; $129

c. Receive, process, and act on a permittee s non-compliance report

Generally, when a permittee violates a permit condition, it must submit a non-compliance report to the permit authority. Permittees report both unanticipated bypasses or upsets and violations of maximum daily discharge limits. The permit authority receives and processes both verbal and written non-compliance reports. In some cases, immediate action by the permit authority is required to mitigate the problem.

Data from the POTW survey indicate that 38.5 percent of all facilities submit at least one non-compliance report annually. Of facilities that submit at least one non-compliance report, the median number of reports filed per year is 5 reports.

Table C.10: Administrative Activity: Receive, process and act on a permittee s non-compliance reports

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
38.5% of all indirect dischargers receiving a new permit.	5 times per year	1.0 hour; $37	2.0 hours; $74	5.7 hours; $211

d. Review a permittee s compliance schedule report

Permittees submit reports to permit authorities that state whether compliance schedule milestones contained in their permits have been met. If the facility is in compliance, the permit authority reviews and files the report.

Data from the POTW survey indicate that approximately 17% of all facilities are issued compliance milestones. Of these facilities, 94% meet the milestones. Facilities submit an average of two compliance milestone reports per year. The cost of handling the report depends on whether the facility is in compliance with the schedule.

Table C.11: Administrative Activity: Review a compliance schedule report

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
Meeting milestones: 16.0% of all facilities issued a new permit (94% of the 17% who have compliance milestones).	2 reports per year	0.5 hours; $18	1.0 hour; $37	3.0 hours; $111
Not meeting milestones: 1% of all facilities issued a new permit (6% of the 17% who have compliance milestones).	2 reports per year	0.8 hours; $30	1.8 hours; $67	6.0 hours; $222

C.3.4 Enforcement

When a permitting authority identifies a permit violation, the authority determines and implements an appropriate enforcement action. Considerations when determining enforcement response include (1) the severity of the permit violation, (2) the degree of economic benefit obtained by the permittee through the violation, (3) previous enforcement actions taken against the violator, (4) the deterrent effect of the response on similarly situated permittees, and (5) considerations of fairness and equity. EPA estimated administrative costs for two levels of enforcement actions: (1) less severe actions such as issuing an administrative order, and (2) more severe activities such as levying an administrative fine.

EPA estimated that, annually, seven percent of facilities issued a new permit under the MP&M rule will require a minor enforcement action, such as issuing an administrative compliance order. In addition, EPA estimated that seven percent of facilities receiving a new permit will require more severe enforcement actions such as a fine or penalty.

Table C.12: Administrative Activity: Minor enforcement action e.g., issue an administrative order

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
Seven percent of MP&M facilities being issued a new permit	Annual	1.0 hour; $37	3.7 hours; $137	13.3 hours; $492

Table C.13: Administrative Activity: Minor enforcement action, e.g., impose an administrative fine

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
Seven percent of MP&M facilities being issued a new permit	Annual	1.0 hour; $37	5.3 hours; $196	24.7 hours; $913

C.3.5 Repermitting

The duration of permits cannot exceed five years. Renewing a permit for a facility in compliance with an existing permit is expected to be a relatively straightforward task. The data required in the permit application generally requires few changes, although pollutant limits may need to be recalculated in some cases. The labor required for repermitting depends, in part, on the extent to which the permit authority has automated the paperwork.

Table C.14: Administrative Activity: Repermit

Percent of facilities for which activity is required	Frequency of activity	Typical costs		
		Low	Median	High
100% of MP&M facilities being issued a new permit	every 5 years	1.0 hour; $37	4.0 hours; $148	17.0 hours; $629

C.4 POTW Administrative Costs by Option

Exhibits C.1 through C.7 at the end of this chapter present the calculation of POTW permitting costs for the proposed rule and the two regulatory alternatives considered by EPA.

Exhibit C1 provides an overview of the permitting activities, the estimated percentage of facilities that require the administrative function, the frequency with the function is performed, and per facility hours and costs for each function.

Exhibit C.2 contains the per facility hour burden and other assumptions described above for each of the three types of permitting (new concentration-based permit, new mass-based permit, and converting a concentration-based to a mass-based permit.)

Exhibits C.3 through C.5 show hours by type of permit for the low, medium, and high estimate of per-facility burden,

respectively. These exhibits also summarize costs and dollars by year and permit type.

Exhibit C.6 presents the number of facilities requiring different types of permitting, for each of the regulatory options. The exhibit shows the total number of facilities that will be subject to requirements, the baseline permit status of those facilities, and the number of facilities by expected post-compliance permit status. These estimates are based on facility survey information about baseline permit status, the results of the facility impact analysis described in Chapter 5, and EPA's assumption for costing purposes that as many as one-third of all MP&M facilities (except Steel Forming & Finishing) could be issued mass-based permits by the permitting authority. The exhibit also shows the number of currently-permitted facilities that are projected to close as a result of the rule, and which will therefore no longer require permitting.

Finally, Exhibit C.6 shows the resulting calculation of POTW administrative hours and costs by year for each regulatory option. This exhibit also shows the present value of these costs, the annualized cost, and the maximum hours and costs incurred in any one year, for each option. These calculations reflect the incremental number of facilities requiring different types of permitting, inspection, monitoring, enforcement and repermitting in each year multiplied by the unit hours and cost per facility for those activities. All facilities are assumed to receive a permit under the proposed rule within the three-year compliance period. Some facilities with existing permits are repermitted sooner than they otherwise would be on the normal five-year permitting cycle. The cost analyses calculates incremental costs by subtracting the costs of repermitting these facilities on a five-year schedule from the costs of repermitting all such facilities within three years. EPA assumes that the required initial permitting activities will be equally divided over the three-year period. The analysis also calculates the net increase in the number of facilities requiring permitting by subtracting the number of facilities that close due to the rule from the number of facilities that will require new permits under the proposed rule.

More detailed information on these cost calculations is provided in the docket for the proposed rule.

APPENDIX C EXHIBITS

Exhibit C-1: Government Administrative Activities for Indirect Dischargers: Per Facility Hours and Costs

Exhibit C-2: Per-Facility Hours and Assumptions

Exhibit C-3: Low Estimate of Hours and Costs per Facility

Exhibit C-4: Medium Estimate of Hours and Costs per Facility

Exhibit C-5: High Estimate of Hours and Costs per Facility

Exhibit C-6: Number of Facilities Requiring Additional Permitting

Exhibit C-7: POTW Administrative Costs by Option

Exhibit C.1: Government Administrative Activities for Indirect Dischargers: Per Facility Hours and Costs

Administrative Activity	Percent of facilities for which activity is required	Frequency of activity	Typical hours and costs		
			Low	Median	High
Develop and issue a concentration-based permit at a previously unpermitted facility	100% of unpermitted facilities being issued a new concentration-based permit (2/3 of new permits)	One time	3.7 hours; $137	9.7 hours; $359	30.7 hours; $1,135
Develop and issue a mass-based permit at a previously unpermitted facility	100% of unpermitted MP&M facilities being issued a new mass-based permit (1/3 of new permits)	One time	4.0 hours; $148	12.0 hours; $444	40.0 hours; $1,479
Develop and issue a mass-based permit at a facility holding a concentration-based permit	All Steel Forming & Finishing facilities with a concentration-based permits and 1/3 of other facilities with a concentration-based permit	One time	2.0 hours; $74	8.0 hours; $296	21.0 hours; $777 year
Provide technical guidance to a permittee on permit compliance	100% of MP&M facilities being issued a new concentration-based permit	One time	1.0 hour; $37	3.3 hours; $122	10.7 hours; $396
	100% of MP&M facilities being issued a new mass-based permit	One time	2.0 hours; $74	3.7 hours; $137	13.0 hours; $481
Conduct a public or evidentiary hearing	3.2% of MP&M facilities being issued a new mass-based or concentration-based permit	One time	2.3 hours; $85	8.0 hours; $296	33.3 hours; $1,231
Inspect facility for permit development	100% of MP&M facilities being issued a new permit	One Time	2.3 hours; $85	4.7 hours; $174	12.0 hours; $444
Inspect facility for compliance assessment	100% of MP&M facilities being issued a new permit	Annual	1.8 hours; $67	3.7 hours; $137	10.0 hours; $370
Sample and analyze permittee's effluent	100% of MP&M facilities being issued a new permit	Annual	1.0 hour; $37	3.0 hours; $111	14.0 hours; $518
Review and enter data from permittee's compliance self-monitoring reports	100% of MP&M facilities being issued a new permit	Annual	0.5 hours; $18	1.0 hour; $37	3.5 hours; $129
Receive, process and act on a permittee's non-compliance reports	38.5% of all indirect dischargers receiving a new permit.	5 times per year	1.0 hour; $37	2.0 hours; $74	5.7 hours; $211
Review a compliance schedule report	Meeting milestones: 16.0% of all facilities issued a new permit (94% of the 17% who have compliance milestones).	2 reports per year	0.5 hours; $18	1.0 hour; $37	3.0 hours; $111
	Not meeting milestones: 1% of all facilities issued a new permit (6% of the 17% who have compliance milestones).	2 reports per year	0.8 hours; $30	1.8 hours; $67	6.0 hours; $222
Minor enforcement action e.g., issue an administrative order	7% of MP&M facilities being issued a new permit	Annual	1.0 hour; $37	3.7 hours; $137	13.3 hours; $492
Minor enforcement action, e.g., impose an administrative fine	7% of MP&M facilities being issued a new permit	Annual	1.0 hour; $37	5.3 hours; $196	24.7 hours; $913
Repermit	100% of MP&M facilities being issued a new permit	Every 5 years	1.0 hour; $37	4.0 hours; $148	17.0 hours; $629

Exhibit C.2: Per-Facility Hours and Assumptions

Activity	Low	Medium	High	% Facil	x/yr	Notes
New concentration-based permit						
develop and issue permit	3.7	9.7	30.7	100.0%	1	one-time
provide technical guidance	1.0	3.3	10.7	100.0%	1	one-time
conduct public or evidentiary hearings	2.3	8.0	33.3	3.2%	1	one-time, 3.2% of facilities
inspection for permit development	2.3	4.7	12.0	100.0%	1	one-time
inspection for compliance assessment	1.8	3.7	10.0	100.0%	1	annual
sample and analyze effluent	1.0	3.0	14.0	100.0%	1	annual
review & record self-monitoring reports	0.5	1.0	3.5	100.0%	1	annual
process & act on non-compliance reports	1.0	2.0	5.7	38.5%	5	5x/year, 38.5% of facilities
review compliance schedule report - in compliance with schedule	0.5	1.0	3.0	16.0%	2	2x/yr, 17% of facilities with compliance milestones, of which 94% in compliance
review compliance schedule report - not in compliance with schedule	0.8	1.8	6.0	1.0%	2	2x/yr, 17% of facilities with compliance milestones, of which 6% not in compliance
minor enforcement action (e.g., admin order)	1.0	3.7	13.3	7.0%	1	annual, 7% of facilities
minor enforcement action (e.g., admin fine)	1.0	5.3	24.7	7.0%	1	annual, 7% of facilities
repermit	1.0	4.0	17.0	100.0%	1	every three years
New mass-based permit						
develop and issue permit	4.0	12.0	40.0	100.0%	1	one-time
provide technical guidance	2.0	3.7	13.0	100.0%	1	one-time
conduct public or evidentiary hearings	2.3	8.0	33.3	3.2%	1	one-time, 3.2% of facilities
inspection for permit development	2.3	4.7	12.0	100.0%	1	one-time
inspection for compliance assessment	1.8	3.7	10.0	100.0%	1	annual
sample and analyze effluent	1.0	3.0	14.0	100.0%	1	annual
review & record self-monitoring reports	0.5	1.0	3.5	100.0%	1	annual
process & act on non-compliance reports	1.0	2.0	5.7	38.5%	5	5x/year, 38.5% of facilities
review compliance schedule report - in compliance with schedule	0.5	1.0	3.0	16.0%	2	2x/yr, 17% of facilities with compliance milestones, of which 94% in compliance
review compliance schedule report - not in compliance with schedule	0.8	1.8	6.0	1.0%	2	2x/yr, 17% of facilities with compliance milestones, of which 6% not in compliance
minor enforcement action (e.g., admin order)	1.0	3.7	13.3	7.0%	1	annual, 7% of facilities
minor enforcement action (e.g., admin fine)	1.0	5.3	24.7	7.0%	1	annual, 7% of facilities
repermit	1.0	4.0	17.0	100.0%	1	every three years
Converting concentration-based to mass-based						
develop and issue permit	2.0	8.0	21.0	100.0%	1	one-time
provide technical guidance						
conduct public or evidentiary hearings						
inspection for permit development						
inspection for compliance assessment	1.8	3.7	10.0	100.0%	1	annual
sample and analyze effluent	1.0	3.0	14.0	100.0%	1	annual
review & record self-monitoring reports	0.5	1.0	3.5	100.0%	1	annual
process & act on non-compliance reports	1.0	2.0	5.7	38.5%	5	5x/year, 38.5% of facilities
review compliance schedule report - in compliance with schedule	0.5	1.0	3.0	16.0%	2	2x/yr, 17% of facilities with compliance milestones, of which 94% in compliance
review compliance schedule report - not in compliance with schedule	0.8	1.8	6.0	1.0%	2	2x/yr, 17% of facilities with compliance milestones, of which 6% not in compliance
minor enforcement action (e.g., admin order)	1.0	3.7	13.3	7.0%	1	annual, 7% of facilities
minor enforcement action (e.g., admin fine)	1.0	5.3	24.7	7.0%	1	annual, 7% of facilities
repermit	1.0	4.0	17.0	100.0%	1	every three years

Source: estimates of hours by activity and average hourly rate from the 1996 MP&M POTW Survey.
Discount rate: *7%*
Average hourly rate: *$36.98* (1999$)

Exhibit C.3: Low Estimate of Hours and Costs per Facility
(average considering frequency of activity and percent of facilities requiring activity)

Activity	Initial Year	Annual (non-permitting year)	Repermit Year
New concentration-based permit			
develop and issue permit	4		
provide technical guidance	1		
conduct public or evidentiary hearings	0		
inspection for permit development	2		
inspection for compliance assessment	2	2	2
sample and analyze effluent	1	1	1
review & record self-monitoring reports	1	1	1
process & act on non-compliance reports	2	2	2
review compliance schedule report - in compliance with schedule	0	0	0
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	0	0	0
minor enforcement action (e.g., admin fine)	0	0	0
repermit			1
Total Hours by Year	*13*	*6*	*7*
Total Dollars by Year	*$466*	*$205*	*$242*
New mass-based permit			
develop and issue permit	4		
provide technical guidance	2		
conduct public or evidentiary hearings	0		
inspection for permit development	2		
inspection for compliance assessment	2	2	2
sample and analyze effluent	1	1	1
review & record self-monitoring reports	1	1	1
process & act on non-compliance reports	2	2	2
review compliance schedule report - in compliance with schedule	0	0	0
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	0	0	0
minor enforcement action (e.g., admin fine)	0	0	0
repermit			1
Total Hours by Year	*14*	*6*	*7*
Total Dollars by Year	*$515*	*$205*	*$242*
Upgrading from concentration-based to mass-based			
develop and issue permit	2		
provide technical guidance	0		
conduct public or evidentiary hearings	0		
inspection for permit development	0		
inspection for compliance assessment	2	2	2
sample and analyze effluent	1	1	1
review & record self-monitoring reports	1	1	1
process & act on non-compliance reports	2	2	2
review compliance schedule report - in compliance with schedule	0	0	0
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	0	0	0
minor enforcement action (e.g., admin fine)	0	0	0
repermit			1
Total Hours by Year	*8*	*6*	*7*
Total Dollars by Year	*$279*	*$205*	*$242*

annualized over 15 year period at 7 %

Exhibit C.4: Medium Estimate of Hours and Costs per Facility
(average considering frequency of activity and percent of facilities requiring activity)

Activity	Initial Year	Annual (non-permitting year)	Repermit Year
New concentration-based permit			
develop and issue permit	10		
provide technical guidance	3		
conduct public or evidentiary hearings	0		
inspection for permit development	5		
inspection for compliance assessment	4	4	4
sample and analyze effluent	3	3	3
review & record self-monitoring reports	1	1	1
process & act on non-compliance reports	4	4	4
review compliance schedule report - in compliance with schedule	0	0	0
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	0	0	0
minor enforcement action (e.g., admin fine)	0	0	0
repermit			4
Total Hours by Year	*30*	*13*	*17*
Total Dollars by Year	*$1,128*	*$464*	*$612*
New mass-based permit			
develop and issue permit	12		
provide technical guidance	4		
conduct public or evidentiary hearings	0		
inspection for permit development	5		
inspection for compliance assessment	4	4	4
sample and analyze effluent	3	3	3
review & record self-monitoring reports	1	1	1
process & act on non-compliance reports	4	4	4
review compliance schedule report - in compliance with schedule	0	0	0
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	0	0	0
minor enforcement action (e.g., admin fine)	0	0	0
repermit			4
Total Hours by Year	*33*	*13*	*17*
Total Dollars by Year	*$1,227*	*$464*	*$612*
Upgrading from concentration-based to mass-based			
develop and issue permit	8		
provide technical guidance	0		
conduct public or evidentiary hearings	0		
inspection for permit development	0		
inspection for compliance assessment	4	4	4
sample and analyze effluent	3	3	3
review & record self-monitoring reports	1	1	1
process & act on non-compliance reports	4	4	4
review compliance schedule report - in compliance with schedule	0	0	0
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	0	0	0
minor enforcement action (e.g., admin fine)	0	0	0
repermit			4
Total Hours by Year	*21*	*13*	*17*
Total Dollars by Year	*$759*	*$464*	*$612*

annualized over 15 year period at 7 %

Exhibit C.5: High Estimate of Hours and Costs per Facility
(average considering frequency of activity and percent of facilities requiring activity)

Activity	Initial Year	Annual (non-permitting year)	Repermit Year
New concentration-based permit			
develop and issue permit	31		
provide technical guidance	11		
conduct public or evidentiary hearings	1		
inspection for permit development	12		
inspection for compliance assessment	10	10	10
sample and analyze effluent	14	14	14
review & record self-monitoring reports	4	4	4
process & act on non-compliance reports	11	11	11
review compliance schedule report - in compliance with schedule	1	1	1
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	1	1	1
minor enforcement action (e.g., admin fine)	2	2	2
repermit			17
Total Hours by Year	*97*	*42*	*59*
Total Dollars by Year	*$3,575*	*$1,561*	*$2,190*
New mass-based permit			
develop and issue permit	40		
provide technical guidance	13		
conduct public or evidentiary hearings	1		
inspection for permit development	12		
inspection for compliance assessment	10	10	10
sample and analyze effluent	14	14	14
review & record self-monitoring reports	4	4	4
process & act on non-compliance reports	11	11	11
review compliance schedule report - in compliance with schedule	1	1	1
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	1	1	1
minor enforcement action (e.g., admin fine)	2	2	2
repermit			17
Total Hours by Year	*108*	*42*	*59*
Total Dollars by Year	*$4,004*	*$1,561*	*$2,190*
Upgrading from concentration-based to mass-based			
develop and issue permit	21		
provide technical guidance	0		
conduct public or evidentiary hearings	0		
inspection for permit development	0		
inspection for compliance assessment	10	10	10
sample and analyze effluent	14	14	14
review & record self-monitoring reports	4	4	4
process & act on non-compliance reports	11	11	11
review compliance schedule report - in compliance with schedule	1	1	1
review compliance schedule report - not in compliance with schedule	0	0	0
minor enforcement action (e.g., admin order)	1	1	1
minor enforcement action (e.g., admin fine)	2	2	2
repermit			17
Total Hours by Year	*63*	*42*	*59*
Total Dollars by Year	*$2,338*	*$1,561*	*$2,190*

annualized over 15 year period at 7 %

Exhibit C.6: Number of Facilities Requiring Additional Permitting

Proposed Rule	
Number of facilities operating post-regulation requiring a permit	**4,944**
Of facilities operating post-regulation:	
existing concentration-based	629
existing mass-based	3,667
no permit in baseline	648
concentration based to be converted to mass-based	223
new concentration-based	432
new mass-based	216
Number of currently permitted facilities closing (no longer requiring a permit)	**143**
Of facilities closing due to the rule:	
existing concentration-based	12
existing mass-based	131

Option 2/6/10	
Number of facilities operating post-regulation requiring a permit	**53,009**
Of facilities operating post-regulation:	
existing concentration-based	25,232
existing mass-based	3,764
no permit in baseline	24,013
concentration based to be converted to mass-based	8,424
new concentration-based	16,009
new mass-based	8,004
Number of currently permitted facilities closing (no longer requiring a permit)	**1,020**
Of facilities closing due to the rule:	
existing concentration-based	889
existing mass-based	131

Option 4/8	
Number of facilities operating post-regulation requiring a permit	**51,344**
Of facilities operating post-regulation:	
existing concentration-based	25,226
existing mass-based	3,440
no permit in baseline	22,678
concentration based to be converted to mass-based	8,422
new concentration-based	15,119
new mass-based	7,559
Number of currently permitted facilities closing (no longer requiring a permit)	**1,348**
Of facilities closing due to the rule:	
existing concentration-based	894
existing mass-based	454

Exhibit C.7: POTW Administrative Costs by Option (@ 7% discount rate)

Proposed Rule

	Year Relative to Promulgation of Rule														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Hours															
High	29,254	36,360	43,466	6,225	6,225	34,241	34,241	34,241	6,225	6,225	34,241	34,241	34,241	6,225	6,225
Medium	8,658	10,768	12,879	2,780	2,780	9,372	9,372	9,372	2,780	2,780	9,372	9,372	9,372	2,780	2,780
Low	3,173	4,106	5,038	1,910	1,910	3,558	3,558	3,558	1,910	1,910	3,558	3,558	3,558	1,910	1,910
Total Costs															
High	$1,081,831	$1,344,609	$1,607,388	$230,212	$230,212	$1,266,244	$1,266,244	$1,266,244	$230,212	$230,212	$1,266,244	$1,266,244	$1,266,244	$230,212	$230,212
Medium	$320,171	$398,209	$476,248	$102,791	$102,791	$346,563	$346,563	$346,563	$102,791	$102,791	$346,563	$346,563	$346,563	$102,791	$102,791
Low	$117,330	$151,823	$186,316	$70,649	$70,649	$131,592	$131,592	$131,592	$70,649	$70,649	$131,592	$131,592	$131,592	$70,649	$70,649

	High	Medium	Low
NPV	$8,310,860	$2,483,585	$1,047,744
Max One Year Hours	43,466	12,879	5,038
Max One Year Costs	$1,607,388	$476,248	$186,316
Annualized Cost	$912,488	$272,684	$115,037

Option 2/6/10

	Year Relative to Promulgation of Rule														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Hours															
High	863,939	1,187,479	1,511,019	868,565	868,565	1,168,950	1,168,950	1,168,950	868,565	868,565	1,168,950	1,168,950	1,168,950	868,565	$868,565
Medium	272,917	368,999	465,082	264,235	264,235	334,913	334,913	334,913	264,235	264,235	334,913	334,913	334,913	264,235	$264,235
Low	109,027	151,496	193,965	121,404	121,404	139,073	139,073	139,073	121,404	121,404	139,073	139,073	139,073	121,404	$121,404
Total Costs															
High	$31,948,466	$43,912,970	$55,877,474	$32,119,541	$32,119,541	$43,227,754	$43,227,754	$43,227,754	$32,119,541	$32,119,541	$43,227,754	$43,227,754	$43,227,754	$32,119,541	$32,119,541
Medium	$10,092,463	$13,645,595	$17,198,727	$9,771,403	$9,771,403	$12,385,100	$12,385,100	$12,385,100	$9,771,403	$9,771,403	$12,385,100	$12,385,100	$12,385,100	$9,771,403	$9,771,403
Low	$4,031,823	$5,602,326	$7,172,829	$4,489,511	$4,489,511	$5,142,936	$5,142,936	$5,142,936	$4,489,511	$4,489,511	$5,142,936	$5,142,936	$5,142,936	$4,489,511	$4,489,511

	High	Medium	Low
NPV	$357,680,237	$107,121,278	$45,719,037
Max One Year Hours	1,511,019	465,082	193,965
Max One Year Costs	$55,877,474	$17,198,727	$7,172,829
Annualized Cost	$39,271,367	$11,761,340	$5,019,704

Option 4/8

	Year Relative to Promulgation of Rule														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Hours															
High	812,714	1,112,853	1,412,992	798,371	798,371	1,089,320	1,089,320	1,089,320	798,371	798,371	1,089,320	1,089,320	1,089,320	798,371	798,371
Medium	257,134	346,267	435,400	243,389	243,389	311,847	311,847	311,847	243,389	243,389	311,847	311,847	311,847	243,389	243,389
Low	102,504	141,902	181,299	112,189	112,189	129,304	129,304	129,304	112,189	112,189	129,304	129,304	129,304	112,189	112,189
Total Costs															
High	$30,054,148	$41,153,303	$52,252,458	$29,523,746	$29,523,746	$40,283,052	$40,283,052	$40,283,052	$29,523,746	$29,523,746	$40,283,052	$40,283,052	$40,283,052	$29,523,746	$29,523,746
Medium	$9,508,810	$12,804,958	$16,101,105	$9,000,507	$9,000,507	$11,532,108	$11,532,108	$11,532,108	$9,000,507	$9,000,507	$11,532,108	$11,532,108	$11,532,108	$9,000,507	$9,000,507
Low	$3,790,616	$5,247,531	$6,704,445	$4,148,760	$4,148,760	$4,781,660	$4,781,660	$4,781,660	$4,148,760	$4,148,760	$4,781,660	$4,781,660	$4,781,660	$4,148,760	$4,148,760

	High	Medium	Low
NPV	$332,591,953	$99,684,264	$42,526,298
Max One Year Hours	1,412,992	435,400	181,299
Max One Year Costs	$52,252,458	$16,101,105	$6,704,445
Annualized Cost	$36,516,809	$10,944,796	$4,669,159